# DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

#### LAKE TROPHIC DATA

### MORPHOMETRIC:

Lake: BARBADOES POND		Lake Area (ha):	5.75
Town: MADBURY		Maximum depth (m):	14.6
County: Strafford		Mean depth (m):	6.1
River Basin: Coastal		Volume (m³):	348500
Latitude: 43°11'25"	N	Relative depth:	5.4
Longitude: 70°56'00"	W	Shore configuration:	1.18
Elevation (ft):	132	Areal water load (m/yr)	: 3.20
Shore length (m): 1	1000	Flushing rate (yr <sup>-1</sup> ):	0.50
Watershed area (ha):	38.8	P retention coeff.:	0.74
% watershed ponded:	0.0	Lake type:	natural

BIOLOGICAL:	29 January 1992	29 July 1991
DOM. PHYTOPLANKTON (% TOTAL) #	SYNURA 85%	DINOBRYON 60%
#:	2	CERÁTIUM 30%
#:	3	
PHYTOPLANKTON ABUNDANCE (cells/mL		
CHLOROPHYLL-A (µg/L)		9.31
DOM. ZOOPLANKTON (% TOTAL) #	KERATELLA 76%	SPARSE - NO DOMINANT
#	2	
#	3	
ROTIFERS/LITER	85	1
MICROCRUSTACEA/LITER	6	5
ZOOPLANKTON ABUNDANCE (#/L)	107	6
VASCULAR PLANT ABUNDANCE		Sparse
SECCHI DISK TRANSPARENCY (m)		4.9
BOTTOM DISSOLVED OXYGEN (mg/L)	2.8	0.4
BACTERIA (fecal col., #/100 ml) #	1	
#	2	
#	3	

# SUMMER THERMAL STRATIFICATION:

#### stratified

Depth of thermocline (m): 4.4
Hypolimnion volume (m³): 80000
Anoxic volume (m³): 56000

CHEMICAL:			BARBADOES MADBURY	S POND	
	29 Janua	ary 1992	29 July 1991		
DEPTH (m)	5.0	10.0	2.0	7.0	12.0
pH (units)	6.5	6.5	7.3	6.6	6.8
A.N.C. (Alkalinity)	15.6	16.2	10.3	25.2	22.2
NITRATE NITROGEN			0.06		< 0.05
TOTAL KJELDAHL NITROGEN					
TOTAL PHOSPHORUS	0.012	0.012	0.009	0.016	0.037
CONDUCTIVITY (µmhos/cm)	151.4	155.6	150.4	146.3	157.4
APPARENT COLOR (cpu)	13	14	11	27	23
MAGNESIUM			1.88		***************************************
CALCIUM			6.8		
SODIUM			16.7		
POTASSIUM			1.82		
CHLORIDE		30	28		26
SULFATE	< 1	10	9	N	6
TN : TP					

All results in mg/L unless indicated otherwise

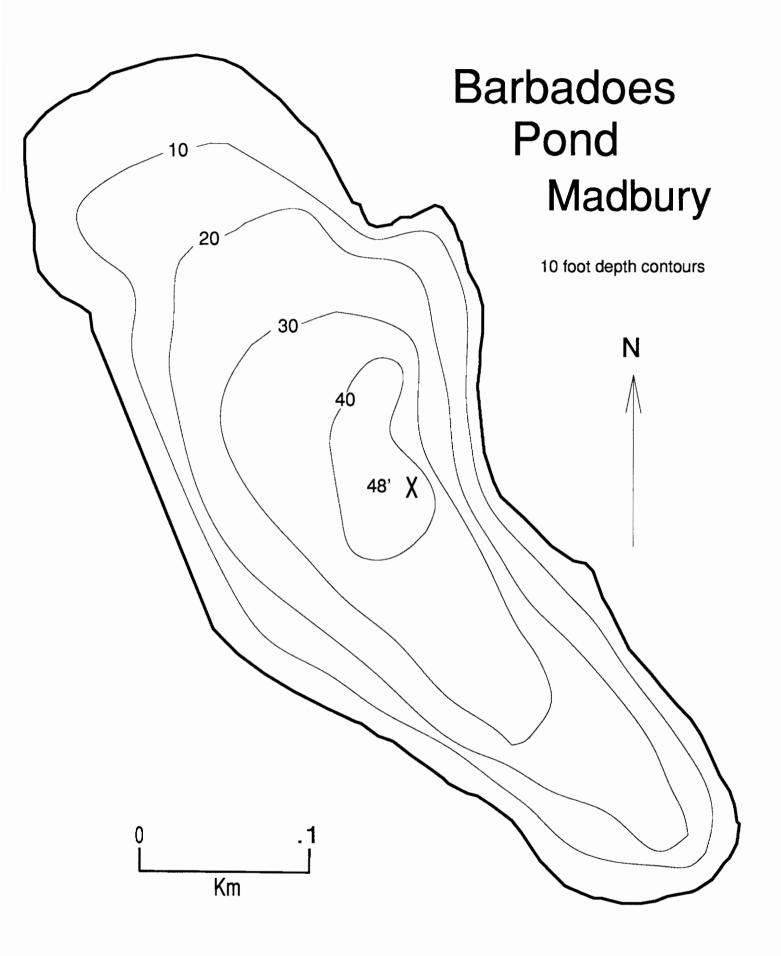
TROPHIC CLASSIFICATION: 1991

CALCITE SATURATION INDEX

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
6	2	0	2	10	Meso.

#### **COMMENTS:**

- 1. No public access; town closed the boat launch site.
- 2. An active sand and gravel pit was located along the western shoreline and an intake pipe was present for the gravel operation.
- 3. The wholewater plankton was dominated by the blue-green Microcystis, but no cell counts were conducted.



#### FIELD DATA SHEET

LAKE: BARBADOES POND TOWN: MADBURY
DATE: 07/29/91 WEATHER: OVERCAST & WARM

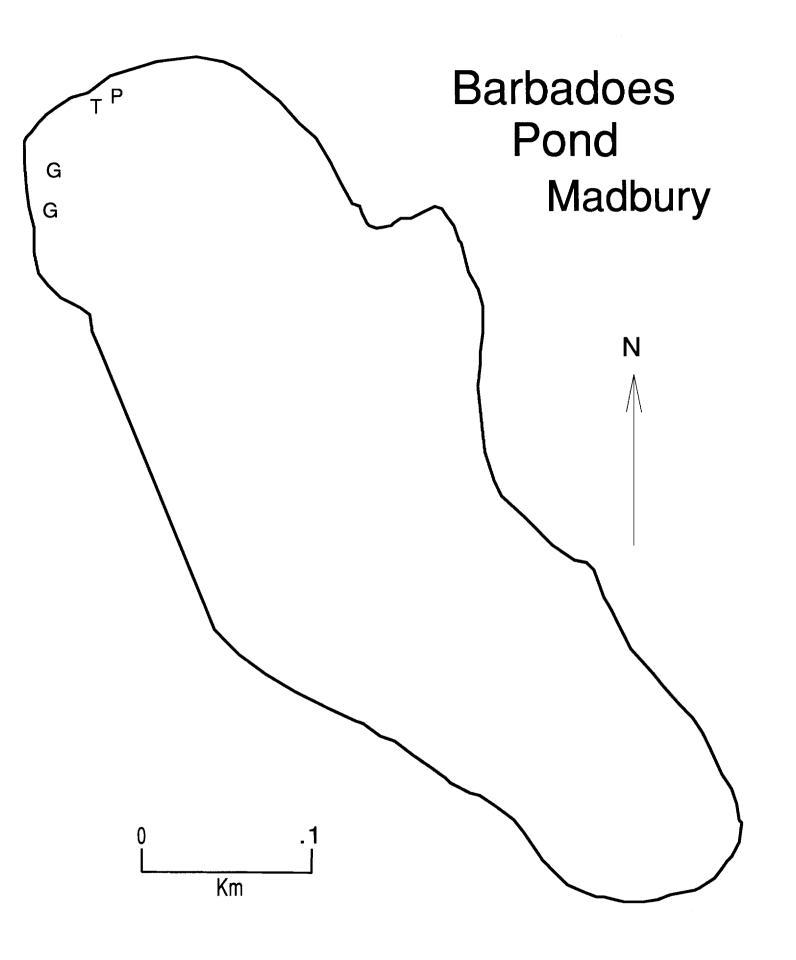
DATE: 07/23/31	WENTI	ER: OVERCAST & WAR	(M
DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	24.8	8.0	95 %
1.0	24.6	8.0	95 %
2.0	24.5	7.9	92 %
3.0	24.4	7.8	91 %
4.0	20.1	13.4	146 %
5.0	14.4	8.9	85 %
6.0	10.2	4.4	39 %
7.0	7.7	1.7	14 %
8.0	6.8	0.4	3 %
9.0	6.4	0.4	3 %
10.0	6.1	0.4	3 %
11.0	5.9	0.4	3 %
12.0	5.8	0.4	3 %
13.0	5.8	0.4	3 %
14.0	5.8	0.4	3 %

SECCHI DISK (m): 4.9 COMMENTS:

BOTTOM DEPTH (m): 14.6

TIME: 1130

\*Dissolved oxygen values are in mg/L



# AQUATIC PLANT SURVEY

LAK	E: BARBADOES POND	TOWN: MADBURY	DATE: 07/29/91			
Kav	PLANT	NAME	ADIMPANCE			
Key	GENERIC	COMMON	ABUNDANCE			
T	Typha	Cattail	Sparse			
P	Pontederia cordata	Pickerelweed	Sparse			
G	Gramineae	Grass family	Sparse			
		OVERALL ABUNDANCE:	⊥ Sparse			
0.1 JP4120						

# **GENERAL OBSERVATIONS:**

1. Numerous crayfish were observed in the pond.

2. Two cormorants were observed.